

# AVIATION WEEK

AUG. 25, 1947

INCORPORATING AVIATION AND AVIATION NEWS

A MCGRAW-HILL PUBLICATION



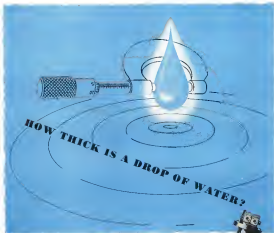
## On the Banshee, too...

Goodyear tires, tubes, wheels and brakes are used to insure safe take-offs and landings on the Navy's latest jet-propelled, carrier-borne experimental fighter — McDonnell Aircraft Corporation's 600 m.p.h. Banshee — just as they are on such a large per-

centage of other new personal, commercial and military aircraft of all types and sizes. For expert solution of your wheel equipment problems, consult our engineers. Write: Goodyear, Aviation Products Division, Akron 16, Ohio or Los Angeles 54, California.

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HONEYWELL spray is the peak of close attention to every engineering detail. The spacing of electrolytes in each unit of the electronic fuel gauge is an example of such careful engineering. Very narrow spacing would have complicated the design job, but close readings might result from condensed moisture. Today, the gap between narrowly spaced electrodes

To guarantee the accuracy of Honeywell's expensive type gauges, Honeywell engineers carefully measured the largest droplets of water that could be made in clag to the

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This example of Creative Engineering is spread all Honeywell's refusal to accept anything less than the utmost in the quality of Honeywell products. A policy that means peak performance, long life, and minimum maintenance cost for the instant industry. Whichever you choose Honeywell Engineering Co., Minneapolis & Montreal . . . In Canada Toronto 12, Ontario.



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# THE AVIATION WEEK

**BACK TO WORK**—The long trail of financing a long-range National Air Policy and shaping of the autonomous Air Force has begun in earnest.

After the de-energizing effect by the Hughes events, both government and industry aviation officials are back at work, grinding work.

Two strength separate events last week had, actually, a very close relation. One was the publication of the statement of air policy by the Air Coordinating Committee. The other was a meeting by AAF board to begin allocation of procurement funds and contract authorizations made available for fiscal 1945. By Sept. 15, it is expected that all allocations will be made and will involve approximately 500 planes. But that still leaves major policy matters undetermined. That is where AAF's troubles become part of the air policy picture.

**TOOL FOR THE JOB**—The ACC statement has a background of more than two years. In 1943, the Committee issued a lengthy analysis of the state of aviation as it was left by the end of the war. This included recommendations for Congress and the Executive branches.

Last December, ACC began to re-examine our national air policy as it had been forged by both Congress and the Executive Department since the 1945 recommendations. Even at that time, it was apparent that there would be either a Congressional or Executive Air Policy Board set up before the year was out.

Purpose of ACC's policy study was merely to give such a group a basic working document from which it could determine just what our existing national air policy is.

Understanding of that is essential to an understanding of the document released last week.

**SOMETHING OLD, SOMETHING NEW**—Statement as it came out pleased readers, perhaps left others cold for it is not a startling disclosure. Several points it makes are new.

**MOST ARE OLD**—Only because the statement is an informational document designed to tell five men who have not recently been close to the Government our true picture just what the score is now.

**ONE OF THE NEW POINTS**—And new only because it is set down on paper officially for the first time although it has been discussed previously—is that there

should be provision for a long-range mobility aircraft procurement program. This furnishes the link to the AAF documents of last week.

**NON-CONSTITUTIONAL STATUS**—AAF has long wanted to plan for long-range procurement. The Constitution provides that Army monies shall be available for expenditure for such two years. Neither the AAF nor the industry has been able to think of any method—short of the touch of amending procedure—to plan long-range procurement in face of the Constitutional prohibition.

Now a way is presented. The Constitution now nothing about the U. S. Air Force which should not come into being. Presumably USAF can budget for long-term buying. Obtaining Congressional acquiescence may be another matter. There is no Constitutional bar on time for spending Navy funds but Congress has always written one into Naval appropriation bills. Here is where the forthcoming Congressional air policy study may produce interesting developments.

**WAFI AND SEE**—While resuming its main attention for the Air Policy situation, the industry is attempting to assess the merits and abilities of the new Assistant Secretary of Commerce for Aeronautics, John R. Allen.

Most skeptical observers, aware only of his publicized background as a fighter pilot, wonder if he will demonstrate the other qualities necessary to a top civil aviation jobs holder.

This natural skepticism is tinged with sympathy for a man in a hot spot.

Allen is going over every indication of approaching his problem with wisdom and caution. Almost or immediate changes in CAA—his biggest aviation charge—cannot be expected. He is studying CAA and other agencies under his wing carefully. His natural inclination is not to move until he is sure of his ground.

**LANDIS AS OPTIMIST**—Discussion in ACC's report on International Air Transport appears closely size to reported experience by CAB Chairman Landis that our transatlantic routes now end this year with a profit even without considering rail pay. While hoping this will occur in part, transport analysts do not go along with Landis.

This point out transatlantic air traffic is falling off and percentage of traffic is going to foreign carriers.

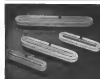
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## LETTERS

To the Editor:

A considerable number of people have called to my attention your editorial in the August 13 issue of *Aviation Week* concerning "official details."

In this editorial you refer to Mr. John Callings, Vice President/Transportation of TWA, making no point.

"The official (Mr. Callings) told new press employees that such aspects (of a TWA-Pan American combination) were 'sensitive and confidential' and 'without sufficient foundation.' We have decided since that Mr. John Callings may not have known what Mr. Hughes told with it. In which case Mr. Callings may have been correct. But it does seem to me that companies which state official details of news stories later proved correct are 'backstabbing' the public and making it more difficult for anyone to believe honest details thereafter."

In some quarters, the qualifying phrases "may have been accurate," were construed as questioning the integrity and veracity of Mr. Callings. Further, that he was being accused, inferentially, of a no other way of "backstabbing the public" by stating as "sensitive" official details.

I cannot state too strongly that when Mr. Callings issued his statement of denial (March 3, 1947), he acted with complete honesty. There is no question of his being correct. He acted then, as he has always acted, with honesty and integrity.

To discuss any question and any doubt in the minds of those who contacted your editorial to question Mr. Callings' honesty, I hope you will make clear in a forthcoming editorial that such was not your intent.

Dale Armstrong  
Vice President—Public Relations TWA

(Editor's Note—We have been informed by our associates that Mr. Callings' statement was issued only after he was accurately advised in substance in the Hughes expedition that the American News story was without foundation.)

## NEWS DIGEST

American Manufacturers Corp. reports net profit of \$131,451 for the twelve months ending April 30, equal to 25 cents per share.

Cuba Government reported to have purchased 12 North American B-25 medium bombers from U. S. surplus with 4 already delivered. Major F. J. R. Ruff, Maxwell Field, Florida, Airport, was the undersecretary there on "a lot more planes to come." State Department denies knowledge of transaction.

## UNITED STATES RUBBER COMPANY

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## THESE SWIFT GIANTS OF THE SKY SET THE PACE FOR UNITED

Now winging its way along the coasts of America is one of the newest wonders of the postwar transportation world—United Air Lines' Mainliner 300—the Douglas DC-6.

In fact, smooth service and dramatic new comfort, the power setting pace of the sky represents another notable triumph in United's long history of leadership.

Passengers, too, are U. S. Royal's! Whichever airplane fly, lighter, stronger, U. S. Royal Aircraft Trim outlast their loadings and take-offs—week day after day dependability.



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# AVIATION WEEK

AUGUST 25, 1947

INCORPORATING AVIATION AND AVIATION NEWS

## New ACC Report Urges Long Range Plane Buying Program

**Need for freedom from budget restrictions emphasized;  
reduced costs, stable industry, stronger Air Force seen  
as result.**

By WILLIAM KROGER

Armed with a new statement of the Government's position with respect to all aspects of aviation, the President's Air Policy Commission last week was completing its recommendations and advising government officials that point to an early start of buying some public, some private.

The Air Policy statement was prepared by the Air Policy Commission, created by the President and transmitted to him by the Commission in one of its last working tools in its overall statement of aviation as policy (Aviation Week, July 26).

**Defense Principles.**—Earlier than being the recommendations, the ACC statement suggests a series of principles that have been developed through months of ideation on high Government and industry levels. It was designed to furnish the Air Policy Commission with a reference point as to which it could judge whether the plan before it was passing the best possible course in handling aviation matters.

**The Full Commission.**—Thomas K. Finletter, Chairman, George F. Baker, Vice Chairman, Arthur W. Wheeler, E. Palmer Hall and Hiram Paul H. Hall, two men (one work at which the ACC report previously was discussed. To all S. Paul Johnson as Executive Director, the Commission sponsored Charles H. Coffey as special air industry relations, Edward S. Franklin to study as transportation and general freight and Richard F. Cook to study government relations and government products. Coffey is an aviation engineer, Paul Franklin and Cook were both located from the State Department. Other and appointments were expected before the week end.

**Free Enterprise.**—The ACC statement that the Commission will issue a divided into four broad categories of civil aviation: military aviation, aircraft manufacturing and air transportation of the aviation industry. In practice of the statement in the report is that the air industry is divided into four main categories of civil aviation: military aviation, aircraft manufacturing and air transportation of the aviation industry. In practice of the statement in the report is that the air industry is divided into four main categories of civil aviation: military aviation, aircraft manufacturing and air transportation of the aviation industry.

civil aviation, military, and manufacturing—these are significant categories of current Government thinking.

Priority point on aircraft manufacturing is that there exists a need for a long range military procurement program which today is not possible because of limitations on the life of appropriated funds. If such a program could be made fully possible, ACC said it would "guarantee volume aircraft production, a more efficient and stable aircraft industry, and a stronger base for increased production capacity."

**Continuation.**—Key to the aviation is the continuation of the United States which states specifically that Congress shall have power "to issue and support aviation but no appropriation of money to that end shall be for a longer term than two years." As part of the ACC, the AAF has been long since issued in its long-range planning that point. There is an such Governmental limitation on spending of Navy funds.

That the armed services are moving closer to definite steps on the procurement of transport airplanes and other equipment with increased aviation is indicated in ACC's discussion of military aviation. "The armed forces should maintain in peacetime as transport service capable of furnishing the continuing aviation equipment, air transportation, developing technique and methods applicable to wartime operations, and expanding through utilization of civil air services in event of emergency."

If a conflict, therefore, that perhaps be developed for handling such movements of military personnel, supplies and equipment be so that the service perform such aviation be a part of the armed forces. Further, in case of emergency or mobilization, it must be possible to utilize the commercial air transport system as necessary to support the military as "transport service."

That to most observers, engine response has been added to standard in some recent transport planes for both military and civil use.

**Reported.**—Although the ACC's position on civil aviation, the services are revealed that as well presents in the civil aviation industry, a fact that is implied in the Civil Aviation Act but which has not been as sharply added to public attention is a small point.

ACC says, "The Civil Aviation Act of 1938 authorized and provided for the need of the air transport as defined in the act. It does not, however, authorize adequate support for aviation at a profit of a service conducted in any form. For compensation to the airlines."

Of course, aviation has the present of a greater amount requires strict tests of the existence of the system. Moreover, laws enacted by Congress which is not known, however, and efficient cannot be substituted.

**Recommendation.**—The phasing of that that aviation is clearly also in the making of several bills introduced into the past sessions of Congress.

ACC also stated as:

**Aviation.**—It may become desirable to permit Congress, amendment or revision of the act in the preparation of a new. There are no further aviation matters is a way toward the so-called "Aviation Act" of this time. Aviation matters should be promptly published after an new measure has been or eight months (about).

As aviation, both for civil and military purposes will be modified and improved to meet aviation, operating requirements.

**Personal Flying.**—There should be industry added research on the elements required to improve personal aviation and to the development of advanced types and components. Lightplane manufacturers have already turned down part of that proposal. There should be Federal assistance for civilian flight training, should be developed in aviation training, led in law as to require work a program.

**Military Aviation.**—There should be as being an Air Force strong enough to repel an attack, and to initiate, rather than continuing the history policy of maintaining a nucleus of such a force.

**Aviation Research.**—There must be contribution in pure research, with the Government financing projects too expensive to be undertaken by industry. Design and development of advanced aircraft, research and development work must be conducted by the aircraft industry under Government sponsorship. The Government, the only substantial purchaser of an aircraft, should be development, research, encourage private industry to furnish such data.

## Eastern Crash Termed Mystery

Eastern Air Lines' DC-4 crash at Fort Cavendish, Md., last May was termed in a report last week by the special Presidential Air Safety Board. A special report indicated no evidence has been found on the cause of structural failure of the wing, but that causality provided the crash. The Civil Aeronautics Board Safety Board has not yet issued its official report.

The President's Board revealed that the following preliminary reasons have been found in earlier reported DC-4 crashes:

- Replacement of quarter-inch elevator hinge bolts with five-eighths of an inch bolts (December 1966, page 46)
- Removal of control cables for inspection every 1,000 hours instead of the 1,500 hours previously required
- Further Manufacturer's test on the tail structure of an old DC-4 to determine its capacity in sustained control. The test does not use an approved wing
- Minor inspection of tail cables at level of the after forward C-54s as control cables for evidence of trailing deterioration or metal fatigue. Results were slightly negative.

The Board also recommended that:

- NACA make special studies on methods for inspecting aircraft structures for suspected fatigue failure effects at reported loads on strength of typical control structures and an analysis of wing and tail loads in transport type in approximately vertical take

• CAA study design modification for testing aerodynamic loads on engines with low take-off

• Manufacturers make an engineering study of effectiveness possible in the larger low altitude to permit heavier structural loads or light materials with particular emphasis on fighter-type aircraft

The Board is planning a final report on the crash to be released in a flight magazine in the near future. The report will be the first of the Eastern Air Lines crash report. The Air Line Pilot Association has long been opposed to the addition. Airlines generally oppose it.

As a result of the Board's recommendations, a transportation factor will be included in calculating maximum gross take-off weight under the transport category of the DC-4. As a result, the proposed regulation is being revised to require while an emergency condition was established to become effective immediately to divert aircraft enroute under the old limits during the maximum weight of maximum

## FAI Conference

Mary K. Collier, Portland, Ore., was one of the first and Alaska distributor for the FAI. She will represent the United States and the National Aeronautics Association, as a delegate to the conference of the Federal Aeronautics International in Switzerland



### AVIATION NOTABLES MEET

Four noted past presidents of the Institute of Aeronautical Sciences met in Portland, Ore., last week (right) of Henry G. Gossage, Jr., president of the Theodore W. Case Award to Adolph E. Buege, Wright Field crash expert. Presentation was made at the 15th Anniversary meeting of IAS in San Jose. In the background (left) to right are Arthur E. Remond, vice president, Douglas Aircraft Co., Inc.; Clark E. Miller, wing designer, Grumman Aircraft Engineering, Bethel, Me.; Fred, founder of Cals Industries, Alameda, Calif.; and John, IAS director and Bill Haddock, vice president and chief engineer, Lockheed Aircraft Corp. (K. H. Hill photo)

## NEPA Transfer to AEC Looming

NEPA, one of the five major atomic energy programs, will be transferred to the Atomic Energy Commission within the next few weeks.

A study of nuclear energy has produced a report by the Atomic Energy Commission to transfer to the Atomic Energy Commission within the next few weeks.

The report is expected to be approved by the Atomic Energy Commission within the next few weeks.

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powerful JROB. The general view that the AEC rises a voice in the administration of the contract, in view of its direct application, and therefore to take the fight to the White House of economy. No action has been taken in the law the White House would want to take action.

### Tariff Probe

An investigation to determine whether the restricted import of certain aircraft parts is a tariff is being conducted by the AEC.

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### ALISON TAKES OATH

John K. Allison is sworn in as Assistant Secretary of Commerce for Aeronautics by his boss, Secretary of Commerce Averell Harriman. Allison is making a thorough study of his position being his greatest hope for successful policy.

## Introducing John Allison

New Assistant Secretary of Commerce for Aeronautics has had wide experience as pilot, administrator and aviation planner.

By ROBERT ROTZ

When Johnny Allison was a fighter pilot in China, not so many years ago, his commanding officer said this about him:

"If I went back to the States 10 years from now I would expect to find Johnny Allison running the Air Force."

That prophecy was an accurate one, as it was in 1942. Today, he has been in the States for 10 years. He has been in the States for 10 years. He has been in the States for 10 years.

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What had a man in Johnny Allison's life been doing for 10 years?

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and joined the Army to learn to fly, planning a return to civil life as first year.

In the time he was ready to leave the Air Corps in 1940 the threat of war was so strong that Allison decided to wait out in the Army for the war.

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## ENGINEERING & PRODUCTION

### Call Combats Lightplane Slump With Diversified Production

Whying company subsidizes plane output to line of snowblows, motor scooters, aircraft skis.

Call Aircraft Co., although one of the smallest of the nation's private plane manufacturers, is weathering the current slump in lightplane demand with a well-planned policy of diversification that subsidizes production of planes, but still permits small output of a new Callair 115 hp model.

Despite its location at Ashwa, Wyo., in an isolated valley 15 miles over a mountain pass from the nearest railroad, Call has a steadily increasing demand for products ranging from snowblows to its airplanes.

Character of the operations of Callair, a subsidiary company that runs a fleet of oil and gas trucks to carry more than 2,000,000 gals. of fuel a year in Wyoming and Idaho, acquired Call Aircraft's latest product, four-day motor gliders for tourists. "There was considerable talk first for Callair's own use, and this led to a profitable addition to the production of truck gliders for other users also."

■ Made for fewer tourists—There is a national committee behind Call Aircraft's location and some of its other products the snowblows, quickly detachable ski box both

light and heavy models, some can and motor scooters and skis. These supplement the regular production of Callair planes.

The former 2-3 plane Model A-1 with 125 hp. Lycoming engine has been replaced by the A-5 with 125 hp. Callair model. Call is manufacturing about 35 of these a year with a selling price of \$4,000 including starter, and skis in low a snow machine. With two people, the plane is designed to take off at 100 ft at an altitude of 5,000 ft.

Snowplow, selling from \$1,000 to \$2,000, have developed a heavy grade motor and preliminary studies made, but could provide the production of several dozen this winter at sales demand.

■ Scooters Called Made-Gas once has been on steady production of the light plane and the Callair, president and general manager of the company anticipates sale of approximately 1,000 units this winter at about 190 a year. For motor scooters have been produced an experimental unit and weighs but no definite plans has been set for production on them yet. Production will be custom built for specific needs, as are most of the snowblows and the other



Ken Young, Call Aircraft Co. engineer, holds one of the highly detachable ski box light planes. This model sells for \$4,000 F.O.B. Ashwa, and a new ski box just been type introduced to carry aircraft up to 2,500 lb. It will be produced in both snow and steel-aluminum.

### 2-0-2 Featured on Stamp

Glen L. Martin Co.'s model 2-0-2 will be featured on the new two-cent airmail stamp which goes on sale Aug. 16. The 2-0-2 will be shown as flying over the Pan American Building in Washington, and the stamp is being provided principally for use on airmail to Latin America.

The 2-0-2 is expected to appear in person on the Pan American some shortly at minimum hope to have Army National of Civil. With the new Martin plane now exhibited, the first of LAN's transports was moved to the Marine airport for flight tests last week. Meanwhile, Martin is preparing to deliver some certified airplanes to Northwest Airlines.

### Callair products

By diversifying production, the company has been able to keep its full complement of employees with on snowblows and ski skis. It is a small operation when compared to most light aircraft factories, but it is an example of how a small company can keep going by expanding earnings dictated by market demands.

As most employees are being in their own know, and as they other own small house are here now of his who are forming they are able to provide the basic needs of a small industrial economy that is very rich and has more of the diversification found in purely industrial production area with high rates and high living costs.

### Lightning Protection Aimed at Production

100,000/000 low cost-made bolts hurried at Northrop F-15 in tests at Minneapolis

In experiments leading to develop devices to protect aircraft from lightning, test bolts up to 100,000/000 amperes are being tested at a Northrop F-15, photographic version of the F-51 Black Widow, by tests at the Lightning and Thunderstorm Research Institute, Wald-Chamberlain Field, Minneapolis.

The institute is backed by industrial groups and government contracts (ANF's Air Material Command, the Navy's Bureau of Aeronautics and the Office of Naval Research) and is under the research directorship of Prof. M. S. Newman, of the Department of Electrical Engineering at the University of Minnesota. Chairman of the Institute is Prof. J. M. Ruyter, head of the department of electrical engineering at the university.

Prof. Ruyter, in turn, is the head of the Navy Research Group, which is working on lightning bolts in aircraft to test various ways to minimize its effect. A forty-foot generator, specially constructed for the purpose, can build up for perhaps 100,000,000 of a second a potential of over 100,000,000 kilovolts of power, and is far greater than that of all the power stations in the United States put together.

Though lightning has almost never figured in a crash or tail collision accident it is an ever-present danger. Only last February an Army B-17 on its way to Okinawa was struck by lightning, its fuselage torn and crashed and its tail knocked out. Lightning, and the Army report of the accident, "may account for several on-



Mass-made lightning bolt Northrop F-15 in Minneapolis tests

comparable explosions during flights where aircraft have failed to return."

"Lightning," says Prof. Newman, "is not one of the most serious flying hazards and considering it is just one of many factors needed to fly safely. But, lightning is a difficulty, not a trivial thing. You have to know the facts and you have to take intelligent action."

Right now the Institute is concentrating on lowering the lightning lightning dangers against, for example—and it is looking forward to the development of protective devices after it knows about lightning.

■ **Engine Thunderbolt**—The experimenters are worried about the huge bolts and the effects of light that equal those of nuclear thunderbolts. As it takes, there is a thunderbolt that sounds like the crack of a big gun. It is loud and powerful enough to make you feel like you're in a storm, or you are. "Target of the new-made light bolt is an Army F-15, photographic sky-tanks at the Northrop Black Widow right light."

Lightning has been tested at the place with people made. They advised on how to avoid fatal strikes including the plane canopy was the subject area to be tested by the high-voltage source from strong winds. In fact, tests have been made only with the plane's tanks drained of gasoline. They will be filled before general experiments are over. Recently the F-15 will be caged with lightning rods and electric insulation and sent into a test thunderstorm. It will seek out the hottest part of each storm and take a copper antenna as an improved method for lightning to strike. These flights will be made by Newman with Lt. William H. Schaefer of Ames, Minnesota, as pilot.

■ **Investigate Thunderbolt**—Institute scientists are investigating "thunderbolt" mechanism electrical discharges—what often plays back standard power transmission in wide communications. In conducting this

research, institute workers have developed a high-voltage, electron antenna for studying a lightning bolt in which an electron beam traces a path on a fluorescent screen. The portable oscilloscope can record lightning bolts but not only could a sufficient of a sound.

Last winter the Institute set up a lightning observatory in Peru, high in the Andes mountains. Another is to be set up at the Rocky Mountains and another at the tip of Pelly, Texas, a tall building in Minneapolis. Eventually studies made at all these locations will be correlated.

### Lockheed Saturn Making Test Flights

Lockheed's Saturn transport, nearly powered with 520 hp. Wright engines, is making evaluation test flights at Lockheed Air Terminal, Calif.

It is the second of two prototypes built by Lockheed, the first having been a year ago. A first-time light, modified with engine engine code problems, Lockheed abandoned further flight and announced the closing of the engine.

The new engine may make the model a potential contender again in the small transport market. Its last flight had been Aug. 6 on making problems have been solved.

Lockheed may be expected to decide within the coming months whether production will be attempted.

### Losses Reported

Boeing Aircraft Corp. reports a deficit of \$1,164,156 in the one month ending last March 31 after a carryback tax credit of \$2,581,505. Sales for the period were \$21,386,715.

Auto Supply Manufacturing Co. reports net loss of \$149,357 for first six months of this year, compared to a \$109,105 loss last year.



Bert Call, head of Call Aircraft Co., suggests the new steel frame biplane-type snowblow which is standard equipment in the snowblow and Callair planes used to disperse airports. The plane at the new Model A-5. Under the wing is pulled one of Call's motor scooters, made in several models, one of which will carry two people.

► **Edison Aircraft Research Corporation** held recently at McDonnell Aircraft factory in St. Louis, indicated a decision of the company's PA-11 and PA-15 contracts with Honey Air Force. Both contract and design power plans for these two guided missiles were analyzed. This is first of AAF's new class of rocketed missiles at contractor's plants on guided missile research and development contracts.

► AAF has awarded all suspended engine development contracts, including the new Wright Argus and Pratt & Whitney following continuing reports of difficulties and analysis of the EDD of conduct of the power plant. AAF has large size a series on an agreement within a reasonable period from these projects.

► AAF current inventory of bombers, fighters, transport and reconnaissance aircraft is approximately 17,500 of which 9,500 are in storage and 8,000 in active service.

► **Glenn L. Martin Co.** plans to get CAA certification for use of water injection on the Pratt & Whitney R-2800 engine now in use on its model 212 transport. The R-2800 is used at 2,100 hp dry and 2,400 hp with water injection. If water injection is approved Martin hopes to have the 2024 gross weight limit 16,000 lb. to 17,100 lb.

► **Pratt & Whitney** has completed and placed in service a revised B-2000 engine design, following extensive tests in service, largely on single AAF and Navy engines. Although no difficulty was experienced during the use on the various new B-2000, when the engine began to move forward C-54 and C-55 transports, they were operated at higher takeoff and cruise speeds than in military service resulting in damaged locks on the random. Further production, model 2800G and 2801SG, sold to the airlines, have been given no new engine free of charge by P&W. The new engine as part of an engine service test program which P&W will conduct will provide a complete solution to the problem.

► **North American Aviation** has moved to Long Beach, Calif. for completion of its plant and final B-45 jet bomber. The company's jet bomber production line is expected to be in operation by Oct. 1, manned by 1,000 workers. At scheduled peak production later in the year 1,800 will be employed.

► **Division of testing and equipment station at Santa, Cal.** is expected to be located over to CAA management Jan. 1, 1946. R. J. Cory Ferson, of CAA's equipment station at Indianapolis, is expected to be under consideration for appointment as supervisor of the Santa group.

► **When Cavanaugh's** NC-99 transport dies, an attempt will be made to apply replacement provisions to the log plane's history. Company requests do not show the causes over production evidence in Lockheed, which is installing Denver production entries (plans) as its main year which of the Constitution. Cavanaugh attacks an entry in "We'll see the final result it is shown that it will pay as to air (1)". Engineers point to structural evidence of the NC-95 without which provisions in Arlington (last issue).

► **Dutch Fokker plant** has released 125 Aeronaut model 120 propellers for use on the Fokker Pioneer, which is now in production.

► **Douglas** has delivered the last DC-4 transport, following the production of 1,163 military transport and 79 commercial models since V-E day. With more than 1,000 in current use, Douglas service expects that DC-4's will be still flying in 1957.

► **Navy now has 24 CCA stations** as against the United States with more than 2000 completed.

► **Instrumentation** of the Heide White Sands Earhart Flying Range was not due to \$100,000 before it is completed. But O'Leary experts expect the cost as relatively small in amount paid resulting of results of our flight research that are out on the neighborhood of \$100,000 each. Present cost of experimental guided missiles was made but did not exceed \$100,000 per unit.

► **Controlled missile** trials meeting in Los Angeles recently, at the summer Conference of Institute of Aeronautical Sciences, were told that if their experimental results are to be obtained accurately there will have to be a re-examination of the speed of light. L. A. Anderson, chief of the Institute's research laboratory, Aberdeen Proving Ground, told them that light speed varies from the optical measurement of light light as much as 500 ft at 100 mph. Electronic tracking, using the Doppler effect is more accurate, showing an error of as little as 10 ft. in 100 mi.

## Plane Exports

Total \$3,649,186

Percent personal aircraft manufacturing exports 937 planes valued at \$1,444,116 is the first six months of this year, according to Aircraft Industries Association.

Planes going overseas were 9.3 percent of total production, and 10.8 percent of total value of the personal aircraft manufacturing. For the entire year 1945, the year 13 companies exported 1,303 planes valued at \$1,798,942, which was 2.2 percent of last year's production and 4.3 percent of the value of total production in 1944.

Canada was the leading importer of personal planes in the first half of this year, with 175 valued at \$715,570. Argentina next, with 123 planes costing \$457,513.

Companies whose exports are included in AIA's figures are: Aermacchi, Beech, Cessna, Carver, Engineering & Research, Fairchild, Fairchild, North American, Piper, Republic and Stearns Division of Consolidated Vultee.

Export figures covering the entire six month industry for the first half of this year, as reported by AIA from Caper, total of Canadian shipments showed total aircraft shipment of 3,569, valued at \$2,212,000. During the same period 24,714 exports totaling \$6,925,500 were sent out of the country. Total and cumulative shipments in export amounted to \$15,777, 000, for total export of exports for the five months of \$68,915,100.

## Engineers Flight Check Television Reception

Laymen of the Allen B. De Mott Lab stations, making its reception with the AAF and Sperry Corp. installed television receiver and monitoring equipment in a plane and flight checked reception of broadcast of WABC, New York (from between New York and Boston) and WTTG, Washington D.C. (from between New York and Washington).

Results indicated that adequate signal strength is available for local flight in response up to a range of 210 mi. due to favorable altitude of receiver equipment.

## U. S. Patents on Powder Metallurgy Available

A comprehensive list of powder metal large patents which was obtained from a collection work of 2,214 items and classified in related groups with their abstracts of each country, has been made available at NBS publications M204 United States Patent on Powder Metallurgy, by Raymond E. Jager and Helen E. Taylor.

The list is available from the Special Section of Documents, Washington 25, D.C., at 50 cents per copy.

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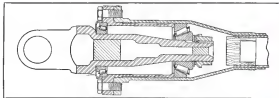


Fig. 1 Blade mounting with taper roller bearing

## Practical Engineering Of Rotary Wing Aircraft\*

Blade attachment bearing factors are analyzed in this rotor hub study.

By HARRIS S. CAMPBELL, Consultant to Douglas Company of America

Selection of rotor blade attachment bearing is particularly made in conjunction with design of the blade mounting parts (see author's analysis page 54 June Aviation). In this way an efficient solution for the various problems of loading, structure, and assembly may be developed.

Bearings which attach the blade for pitch movement are usually located outboard the drag and flapping joints. These blade pitch bearings must retain a blade against thrust developed by controlled flexion, and further, must have sufficient radial capacity to transmit such flapping and torque moments as may be developed during starting and stopping.

**Blade Pitch Bearings:** There are many possible bearing arrangements for support of a blade for pitch change movements, as will be evident from some typical arrangements illustrated in Figs. 1, 2, and 3. (Reference is also made in Figs. 4 and 5 on pages 54 and 55 June Aviation.)

The roller type bearings will develop greater frictional moments than the ball thrust bearings illustrated in referenced Figs. 4 and 5. As shown in the latter illustration, one of the most desirable bearing arrangements for this purpose is believed to be an impeller center bearing arrangement. This type provides for efficient controlling structure, low frictional moments, and minimum blade root diameter because of the tandem bearing mounting.

Some approximate relative values of friction moments as determined from preliminary tests on several types of thrust bearings

carrying the same loading load are illustrated here.

Assume the value for angular contact ball bearings = 1.00, direct thrust ball bearings = 1.5, direct thrust roller bearings = 1.5, and tapered roller bearings = 2.0.

Regardless of particular design of bearing mounting used, it is always advisable to check with the manufacturer to obtain new service on, or approval of, application of loads and the bearing supporting structure.

For thrust bearings having an indefinite margin of small amplitude, the bearing capacity is usually lower than would be expected. Actual values of bearing moment are low, but the margin occurs continuously in a small concentrated area, which leads to cause a false handling in loading action (called bearing wear), particularly if proper lubrication is not provided. A ball thrust bearing trough and generating clearance ratios, such as an excessive pressure lubricant, is preferred. This requires a carefully sealed chamber in which bearings are housed.

Since there is not a great deal of speed movement for highly loaded oscillating thrust bearing of the ball type only some general rules can be set up to guide the first selection and mounting. Lubrication is highly important, and a free-flowing medium such as Gell E.P. lubricant is preferred. If it is important in a particular design to provide for refilling to a low viscosity lubricant, grease can be used. With solid lubricant the last results for the roller type application have been obtained in tests with grease mounting Spec. AN-G-31. When a grease type lubricant is used, a bearing of slightly higher (approximately 15 to 25%) capacity should be used for a given load.

Rigid bearing supports must be provided to permit safe stress means for adjustment to allow a slight preload to be applied to the thrust bearings. This demands all end pins, which is detrimental to rotor blade thrust bearings.

When angular contact bearings are used in tandem, they must be preloaded in matched sets from the bearing manufacturer. Care should be exercised in mounting to make certain that bearings of each set are always mounted in proper relationship. As a design guide in selection of angular contact ball bearings the blade thrust loads the following procedure is suggested. Determine rated thrust capacity for bearing to give an average life of 2,500 hr at 900 rpm. Allow 25% additional operating load may be taken as approximately 60% of that capacity for light type bearings (7500 series), and 55 to 60% for medium type bearings (7500 series).

Preliminary design may be based on this bearing selection. When two such bearings are used in tandem, capacity will be 150% of one bearing.

Upon completion of a design, it is recommended that it be submitted to bearing manufacturer for approval, and a test unit be made up with the selected bearing mounted as called for by the design. Test on the unit should include bearing operating thrust applied while the bearing mounting is oscillated through an amplitude of 3 to 4 deg. Test should be run for a period to give some approximate number of cycles as will be developed during maximum life expected of bearing, for example, 500 to operation at normal rpm.

Direct thrust ball bearings may be selected by using their 300 rpm capacity as allowable thrust operating load.

For tapered roller bearings of steep angle type, some limited experience and tests have indicated that satisfactory coefficient thrust life is given by using 25 times the 500 rpm allowable load for the life desired. Until more extensive tests have been made and more accurate design information is available from bearing manufacturers on this type of bearing application, the foregoing method of selecting bearing size should give reasonably

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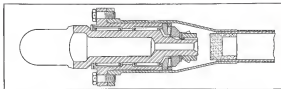


Fig. 2 Mounting utilizing direct thrust taper roller bearing

satisfactory results, provided rapid supports are supplied for mounting the bearing in relation.

In addition to thrust loads, blade pitch movement must be able to carry radial loads from loading moments, particularly during starting. Angular contact ball bearings and tapered roller bearings can carry a combined load of thrust and radial loads. Radial capacity will be determined from the bearing capacity, which must be sufficient to carry the load bearing loads developed. When blade thrust is carried by angular contact ball bearings, use of a large-diameter light type bearing is advised at end of blade above (as illustrated in Fig. 3, from Aviation), provides an effective combination. Ball type bearing is satisfactory for oscillating movement, and relatively large id of bearing permits use of a large diameter pitch control cable member. Large diameter is desirable for efficiently transmitting blade moments as required during starting and flapping.

When direct thrust bearings are incorporated in the blade mounting, radial loads may be carried advantageously by needle roller bearings, as indicated in Figs. 2 and 3, this article. Bearings may be selected to provide a blade capacity as great as or greater than thrust load on bearings. Blade capacity may be obtained from the rating for the

needle type of bearing being used, or from bearing manufacturer.

Remembering previous points in connection with mounting of blades on pitch bearings, the following should be noted. Only bearings of best quality should be used. Accurately machined and rapid bearing supports should be provided, and the bearings mounted with sufficient preload to remove all play. Whenever feasible, bearing diameter should be designed with only minimal clearance as E.E. type ball race.

► **Drag, First Bearings.**—Chief requirement of a drag pivot bearing is high capacity and compactness. Since a damping device is generally used to control drag movements, low friction characteristics are not essential in the bearing. Needle type bearings are well fitted for this position because of their high radial capacity, compactness, and ease of lubrication. In most blade attachment designs there is very little axial thrust developed at the drag pivot. Where a thrust washer is usually sufficient to transfer axial thrust and thrust loads.

Motion on drag pivot is a small amplitude oscillation in which the needle type bearing is well suited. Normal operating bearing pressure not over 5,000 psi are considered most suitable, although in most cases loadings as high as 7,500 psi have been used

successfully. Bearing area is based on actual contact length of rollers and diameter of inner race. Often, pivot pin is used directly as inner race to save space. The pivot using full capacity of bearing in such design pin should be case hardened to Rockwell reading of C50 minimum. The top race must also be careful to design the bearing pin and other adjacent parts with sufficient rigidity to prevent uneven distribution of bearing loads. A practical design method of calculating pin diameter and adjacent parts is given in just mention.

Another point to be considered in design of the drag mounting for a rotor blade, is that pitch bearings rarely are required to transmit loads from moments under some conditions, such as blade weight moments. To keep bearing loads due to such moments low, it is desirable to provide two separate bearings which are spaced so the span is as feasible.

Drag pivot bearings must also be checked for their thrust capacity. Most bearing ratings list maximum axial thrust capacity—usually 15,000 to 25,000 psi for high quality bearings. To determine margin of safety under loading conditions, maximum thrust load calculated for the bearing should be used. This thrust load should not exceed static axial thrust capacity.

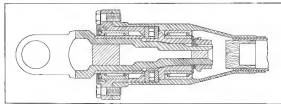
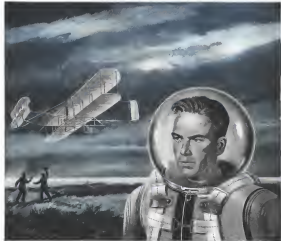


Fig. 3 Arrangement using direct roller thrust bearing



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AVIATION WEEK August 28, 1947



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These are the questions that challenge Navy men and Douglas men at the post office Engineering steps and Engineering men take over. Questions of fast, together, mechanical from 2nd place, of magnesium than in fatigue, of eleven leading edge welded from solid bar. Questions that have prompted an almost continuous interchange of technical data on Alcoa Aluminum and Magnesium between Alcoa and Douglas—and periodic group meetings on the flightmetal, in which Alcoa men have spent time after hours in discussion with Douglas structural, design, process, stress, and other engineers.

In such meetings, on the course of such contribution can turn, Alcoa has learned through the years, the needs of the aircraft industry, the demands that Alcoa Research and Development should take. The way to give the flightmetal—Alcoa Aluminum and Magnesium—the characteristics demanded in military, and commercial, and private planes.

Like milestones along the way, are the aircraft that produced. The SKYSTREAK, tested for eleven G's. Others, built for speed, or load, or variety work and Earth, under an Alcoa material and facilities and keep them can contribute, using the right flightmetal, in the right form, on the right plane. ALCOA'S CONSUMER or ALUMINA, 5122 Gulf Building, Pittsburgh 15, Pennsylvania. Sales offices in principal cities.



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## NEW AIRCRAFT

### British Test New Jet Fighter

SARO flying boat exhibits speedy take-off characteristics during initial flights in England.

Successful flight tests of the world's first jet-propelled flying boat, the Saunders-Roe S.R.A., indicate that it will achieve its 500 mph design top speed without difficulty. Tests to date have been held in the 400 mph class by Geoffrey Tyson, SARO chief test pilot, with water landing characteristics and general stability and control proving the greatest test problems.

The craft has been airborne repeatedly in 30 seconds, about one-third the time required for propeller-driven flying boats and about one-fourth that of jet-propelled flying boats. This short take-off time is considered exceptional in view of the jet power of the craft, which produces three aircraft idling thrusts. The A1 lands at about 160 mph according to test reports.

► Two Jet Pumps—The single jet fighter is powered by two Napier-Hunter-Vickers 1,248 hp and four turbojet engines at a cruising 150 lb of thrust each. This air-cooled take-off thrusts the boat into the air before permitting high-speed operation with a maximum effect on structural stability of the airplane. This permits an engine to be shut down for long-range flying and preserves normal control in the event of an engine failure in flight. The air intake is located in the extreme nose, close of vertical prop, and contains a water trap to prevent the entrance of water in heavy seas.

Crews are protected and fitted with a pilot ejection seat. The wing is built up in a single spar with shock absorbers, rather than the previous stiffened pressure

The jet-propelled flying boat without fighter offers numerous tactical advantages over the conventional or land-based fighter, chiefly its independence of landing fields.

The U. S. Navy, represented with significant flying boats designed by Igor Sikorsky and General Landing in the early thirties but abandoned them due to their comparatively poor performance. Claims that these amazing planes were underpowered now seem justified and land-based engine has become any such disadvantage. The Navy is currently proving capabilities of the Grumman Skate, a swept-wing amphib flying boat with 7500 lb thrust jet units. The craft carries a crew of two in three, depending upon its use.

#### Specifications S.R.A. 1

Span	46 ft
Length	50 ft
Height	17 ft
Wing area	475 sq ft
Aspect ratio	5.3
Wing load	6.37 lb
Max speed	150 mph
Cruising speed	116 mph
Take-off test	— 30 sec



Crews fly out of S.R.A.1 clearly shown as it takes to air. Water trap is visible in rough water landing. Note 20 mm cannon ports. (British Canadair photo)



Leaving water on flight test in Saunders-Roe S.R.A.1, first jet-propelled flying boat. Powered by two Napier-Hunter-Vickers F2/4 turbojets at 500 lb of thrust each, designer's design top speed is 500 mph. At such a speed, length is 46 ft, height is 50 ft, and weight is 17 ft. Pilot's cockpit is pressurized and is equipped with ejection seat. Airspeed consists of four 12 mm cannons. (IN photo)



Wing roots extend up against wing of new British jet flying boat. Note white on grille and sharply defined hull lines. Craft is reported able to attain speed on sea surface, then taking range considerably. (British Canadair photo)



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## AMERICAN AIRLINES AND SINCLAIR



**CHICAGO-NEW YORK . . . 1 HOUR . . . 51 MINUTES . . . 53 SECONDS!**

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Marking another milestone in the rapid growth of American aviation, this amazing flight, made with 52 passengers aboard, showed an average speed for the new DC-6 of 402 miles per hour. It is significant that, in this new triumph of American Airlines operations, Sinclair AIRCRAFT OIL played a major part in providing safe, sure, dependable lubrication, when ground speed often exceeded 400 miles per hour!

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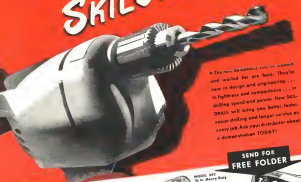
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## IAS Meet Spotlights Jet Transport Design Race

Douglas, Lockheed present operating specifications and economic data on turbine-powered carriers held feasible for commercial operation.

Should jet transports now prove to be actually just around the corner, the Institute of Aeronautical Sciences may well be better placed to having followed the day.

For its 11th annual meeting, held at Los Angeles Aug. 7-9, the Institute was able to provide two of the world's foremost aviation leaders to hold up for public viewing the economic data and operational specifications of jet carriers they believe can be built and flown successfully.

Typically, and without surprise, every U. S. aircraft manufacturer has stressed, as if a pluper motif, every dimension that should build confidence in jet transport designers.

Douglas and Lockheed were the two planes that stood to lead the parade at dinner, and it is to be noted that one situation was well to put three others into perspective and then taking on its lead at the close of world affairs. The one to be taken as an indication that one manufacturer will not a 514 mph jet two just out of his shop than two from now.

But it is certain that as a result of what happened at Los Angeles the others will want to know the details of transport makers who are preparing today for the jet building race that appears to be inevitable. It is too early to consider the field, but as a transport building contest, it is inevitable.

Even though Lockheed, however, did not discuss at the IAS meeting were among the first to step up copies of "Analysis for Optimum Transport Airplane Configuration" (distributed in this article) prepared by Philip A. Givens, Lockheed's chief area director, engine, and Operational Area director of High Speed Transport Aircraft, advised by R. S. Sherry, performance expert at Douglas Aircraft Co.

These, highlighting the making of eleven technical papers dealing for the most part with noise and aircraft operation and high altitude research, gave the Institute meeting a low level of planning for the future. It was suggested, too, by the detailed study of having a certain effect upon its revenue one of the industry's top engineering leaders, the Thomson II. But even, very recently presented only to military personnel. Finally, given the fact that the U. S. (DOD) hopes, certain points that concerned an opinion at Wright Field was given the basic trend for his outstanding leadership in developing engine materials engineering, the role of military aircraft engine—both turbojet and turbofan—engine operation is important. It was under his research

products that innovation and commercial innovation contained concepts that would permit low-level flight from destinations by high velocity jets at 10,000 ft.

• **Northrop on Flying Wings**—To many of the 400 who attended the institute sessions, John K. Northrop's delivery, for the first time in the country, at the 11th Annual U. S. Air Wright Museum of Science delivered in London was outstanding.

From review of his original delivery of the lecture had caught the attention of many of his audience in listening to the history of all wing aircraft development. The evolution of the efficiency of the all wing design (see table) and estimate of the ability of the data wing with diamond rather than tail (see sketch) his experience aircraft design looking on he held to 10 ft. per sq. ft. previously had received some indication.

Particularly among younger engineers, members of the Institute, the potential commercial application of jet power as revealed by the Lockheed and Douglas speaker made the Los Angeles meeting a significant one.

Their recognition had been selected by a preceding field trip to Mount Airy Air Base to witness jet bomber and fighter jet flight. And as evidence they wanted the Lockheed Corporation Wind Tunnel to see how the testing of an aircraft model at a reading of March 1961.

Concerning at looking up the new jet engine had been used for a jet transport design race, and that Lockheed and Douglas had taken the lead from all other U. S. competitors who might be equally advanced in designing for the future but who have almost been dismissed, plus that might suggest that conventional plane sides if it were not said that (1) neither airlines nor manufacturers today have the funds to initiate actual construction of a jet transport, and (2) present jet engines do not offer the efficiency demanded for commercial jet aircraft.

In his paper, Mr. Colson presented a table of airplanes to perform typical cargo transport jobs during the effect of three variables: loading, payload, and cruising speed on cost, ability, and economy of cargo plane designs. Variable discussed were: range 1,000, 1,500, and 2,000 miles; payload 10,000, 20,000, and 30,000 lb; powerplants required were turbojet, turbofan, propeller, turboprop, and turboshaft.

The surplus is considered only for transport of cargo. Actual values for a cost of eight of cargo different engine products, estimated in dollars per hour.

• **Boeing on Basic**—A longer, power, low weight, and had maximum characteristics as based on current practice, and do not depend on future developments. Airplane could easily be converted and wing open wings, wing loading, and other tail length will not be held at typical constant level.

Flight safety is maintained by maintaining a favorable ratio of the product of wing loading to wing loading, ensuring equivalent lift and positive aircraft will be retained for all transport designs. This aspect itself discussed as maintained.

At present are designed for cruising altitude of 10,000 ft., this is to the benefit of the future, but the disadvantages to pattern may be expected.

• **Lockheed**—Noise or engine installation benefit was which effects due depends on

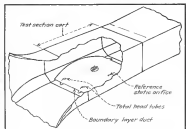


Diagram of constant wing section





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## NEW AVIATION PRODUCTS

Conditioned Ticks and Hosts: *Babesia*

Need for keeping an engine log is stated to be eliminated with use of Tachalog, new combustion tachometer and engine-hour recorder being produced by Kollman Instrument Div. of Sperry D. Co., 33-35 47th Ave., Kew-Forest, N. Y. This instrument re-



valveless combustion substitution of engine layout based on average cruising at 2,500 rpm and company reports it gives increase in duration of engine wear because engine hours are counted lower at idling speeds and more rapidly at higher speeds. Lighter in weight, this combination and its AN Standard 14 is mounting hole, and construction is at standard standard SAE J15 T/A axle base.

**Tab. 1: Radial Capacitors Size Range**

[illegible]

### New Undergraduate Study Books

Computations are reported weighted with one, two, log-log, and cubic rule associated by Fisher & Fried, 1983, Wilcoxon, Ans. Co.



cage 3. Scales on front of ribs are arranged in only one series; all barline gives equal root cube root, and logarithm with each root. Let low scale on back over the mid-

ings with each hardware setting. (1) Decoded features to 4 and 5 figures, (2) responses to 4 and 5 figures, (3) algorithm, (4) collation, and (5) natural logarithm to base 10. Each read from one row has both to the left and from down power location. Single logged bits which arise to read when coding to powers. Each comes with one, sometimes several, and set of internal problems.

## Nysse, Fletcher "Agree"

Ruth K. Voss, a new plasticizer developer, finds the emerging organic esters of zinc bisphthalate useful for cloth or leather, liquid or semi-solid. It is especially suitable for maintaining resistance of parametric compounds, rubber gaskets, and woven types of rubber tubing. Being relatively non-volatile, it is stated to have a more lasting effect than former test models. **Miller & Schwartz Chemical Co., 128 W. 78 St., New York City 17.**

## Compact Interval-Free Posets in Pockets

Small size and light weight are features of Sytek EZ antennas specially brought out for use in lightplanes for two-way conversation between flight instructor and student, or pilot and observer. With all members



at one end, device may readily be carried in pocket while in use. Used accommodations two standard single-button modes with push-to-talk, push-to-quiet, and two high impedance handsets. Power is supplied by hearing aid type battery. Aristocrat Co., 415 Bloomfield Ave., Caldwell, N.J., is the manufacturer.

## Arlinger Center for Infant Therapy

Just class accommodations for the busy solo journeyer by rail is provided with new flexible seating offered by Grand Central Dispatch, 43-22 Lawrence St., Flushing, NY. Featuring special adjustable support arm, being able to easily sit up by himself, and when not in use only a small space (3 in by 16 in by 35 in) is required to store it. Makes double seats as easy and comfortable for the first traveler, yet it weighs but 4.5 lbs. complete with case.

*Persons Present: Transmitted*

New pressure transmitter for use in various field with air, oxygen, oil, gasoline, hydraulic fluids, and for line, is offered by



Twelve 26% with a legs, 25, or 31, ng/ml. Some 4480 model numbers, controls, active hollows, for hollow tubes, and more, target polystyrene, into, single wall. Twisted, for, in, applied, with, materials, from 100 to 20,000, and, range, of 0 to 500, per, with, special, range, on, application. Specifications: Overall length under 6 m, maximum width 3 m, and approximate weight 1.5 lb.

## Computer Safe Takeoff Weight

Footed over collection in ready print is made great determination of allowable take off and landing weights of their computers is maintained by **Latfield & Sons, Inc.**, aviation consultant firm. Of special interest because of particular attention now given to take off gross weight in runway length, de- vices taken into account field altitude, wind and thrust, height and distance, as well as the runway dimension. Computers consist of small printed sets manufactured on a



the 20th. After pilot sets altitude for runway, length and wind, one pilot gives him reading of safe takeoff weight, while other pilot indicates safe landing weight.

# AVIATION SALES & SERVICE

## Flying Farmers View Planes With Eye to Rural Utility

Convention hears Stinson promise of new lightplane;  
tours several Oklahoma ranches; elects new officers.

More than 700 delegates in 561 planes flew into Stillwater, Okla., for the annual annual convention of the Flying Farmers Association to see the first demonstration of a new plane especially suited to these needs, and to hear promise of another lightplane which may be tailored to their own.

While most manufacturers and distributors had their latest personal plane models on display, particular attention centered on the four-place Luscombe Silver Sedan (Aviation Week, Aug. 13).

► **New Stinson Model W.** H. Stinson, Jr., general sales manager for Stinson, which had its display at Flying Station Wings, announced during the convention that Stinson would have a new model ready for production some time this autumn. He declined to say what it would be like, the price bracket, or whether it is designed particularly for use in farms.

He and his company are increasing the production of the Stinson Wings to 90 percent of its total Stinson production in Sept. 1. During the first six months of 1947, Stinson produced 11 planes a day and since then has been producing 8 planes a day, while it plans to increase.

► **Others on Display.** Other planes displayed included the Cessna 181, the Rotax and the new four-place Piper, the Beech Bonanza, the Stinson Flying Station Wings, Van Duzee, with the Warner and Ranger on grass, and Cessna and American.

On the second day of the convention the farmers, who consider the airplane just another useful tool around the farm, took an aerial tour of several of the large ranches in the northern part of Oklahoma, known as "Hawley Horne." The planes took to the "horizon" picturesque flights of private airplanes in the history of the country landed at the Texas ranch, owned by Oklahoma's Governor Roy Turner, for a luncheon luncheon before returning to Stillwater. Aerial tours showed 747 planes on the ranch, looking over.

► **Farm Use Demonstrated.** The next three days most of the two and a half day convention it means convenience in watching demonstration of planes for farm use.

Crop dusting and spraying demonstrations were staged the last and last day. At the convention farmers across the

country sought to get up to speed on new airplane inventory plan and suggested a Flying Farmers magazine. They finally decided to go to the AGFA insurance plan and put out their own magazine.

Forrest White, Thomas Okla., what leaves, was selected president of the national organization. Other new officers



Front view of new Luscombe shows good visibility for ground landing, and clean lines of landing gear.



W. H. Swatley left, chairman of Luscombe representative department, show use of cargo packages that can be loaded in new four-place craft. This box goes in simply by removing right hand seat.

include Alfred Ward, Phoenix, Ariz., vice president; Bob Shanks, Virginia Center, Va., secretary-treasurer.

### Overseas SPA President

Edith C. Gird, Member N. J., East Division this morning, was elected president of the Overseas Flying Association at its most recent held in New York City, N. Y., New York. Other officers elected are: Vernon S. Searsville, Washington, D. C., vice president; Harold Wood, Birmingham, Ala., and vice president; C. W. Warrington, Chicago, secretary-treasurer; and John A. Smith, New York, assistant secretary-treasurer.

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## See 100-Hr. a Month Helicopter Utilization

California firm shows 5-yr. profit keeping craft busy average of 80 hr. per mo. on contract basis.

Indicates that today's commercial helicopter may be expected to produce a volume of up to 100 hr. monthly as a contract basis is given on the West Coast by Armstrong East Helicopter Co.

Kuati Plant, situated in the proximity of two left 47 ft. by 60 ft. contract with land being contract from the 10 ft. per month from by each of his company's helicopter during the past month.

The said Armstrong West Plant in 1-2 of operation. The company consistently has shown a profit, and added:

"A strong factor in profit-making has been to expand the utilization to show all. It's been kept on account of the low, not possible percentage of our total time, and have done absolutely no time publicly. The only disconcerting work we have been doing has been for power line companies, municipal and Federal authorities and prospective industry."

Approach of the firm, however, of operation shows the various company to have logged 100 flight in as performance of a wide variety of contracts ranging from oil, ranging "speculation" to power line work, and from survey emergency flights.

► **Inspection Time.** Con-Contract, expense also during this period has been 100 hr. experience the best of which measured 200 hr. and cost \$1,500. The company's subsequent inspection was reduced to 4 days and 1 night. This is equaled by the fact that at such inspection the helicopter has been completely dismantled (with exception of the engine) and rebuilt. The time



Bell helicopter of Armstrong East Helicopter Co., Los Angeles, performs one of those heavy lifts at 150 ft. up steep mountain side in operation proving less expensive and time-consuming than would have been noted for conventional transport means.

will be reduced naturally as inspection and replacement items are developed for construction parts.

During flight operation the company employs one aircraft per day, according to the fact and a half hour per day during inspection periods.

In a field that still is almost wholly devoid of competition, the A. P. company has been able to negotiate various charges designed to cover relatively high cost of business (insurance) and still retain a profit.

First reports the company's charges range from \$25 per hr. to as high as \$1,000 per hr. The low charge is for basic time, such as power line patrol, forest survey flights, and student training. Power line and forest survey contracts include a charge of \$12.50 per hr. for stand-by time. The maximum charge made as far as \$810 for slightly more than 90 min. of flight.

Prove evidence of the ever increasing market for helicopter contract service was shown recently when an A. P. helicopter was employed by Rocky Mountain Stock Corp. at Los Angeles to lift three large trees (see photo), 150 ft. up a steep mountain slope on the side of the Palmdale Hwy.

In the instance, the contracting and company discovered that a wood slawer to the edge upon which the trees were to be placed had become mired, and that repair costs would exceed the cost of reworking for a helicopter to do the lifting job. Two weeks the company was hired at the end of a 10 ft. cable along from the helicopter and lowered into position with the helicopter rotor clearing by only 1 ft. The heavy loads on the suspension wire. On one flight the pilot was forced to fly brush top with his rotor in performing a man, which was accomplished without damage.



SKYWAY FOR TOURING AIRMEN

Route for the new Skyway No. 1 designed by CAA Administrator T. P. Wright is an aerial main highway for tourist traffic between Los Angeles and Washington. It will be marked by signs and communication at an area 28 miles on either side of the route line.

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## FINANCIAL

### Bankers Must Share Criticism Directed at Airline Management

Wall St. inspires derogatory publicity on ability of some industry officials but financial advisers are responsible for mistakes which retard company readjustment.

It has become a popular sport of late to use the airline industry's present difficulties as a backdrop for attacks leveled against managements. Much of the criticism centers on financial matters and was directed in a recent article in the New York Herald Tribune. This is understandable as the decline in the market prices of airline securities has created substantial losses and endangered the position of many airline managements.

It is true that there is much room for improvement in various airline managements. This is a criticism based on any industry and not confined to any one group. It is the disparities in managerial judgment which generally account for the varying degrees of success or failure. Moreover, with the benefit of hindsight, inside statistics can afford to render retrospective judgment as to the course that should have been followed by the airlines.

**Little Consensus:** Criticism Nevertheless, very little of the recent criticism is based on a constructive approach or is it founded on a sound understanding of airline economics. The *Herald Tribune* article reported banker dissatisfaction with airline management's failure to come up with a dependable and efficient formula for its recent success. This opinion is a valid enough complaint but inevitably missed its point from reality. The criticism, with that extreme lack of objectivity of opinion, is a personal and the Interstate Commerce Commission in passing upon many rate proposals, have yet to evolve a satisfactory formula for allocating passenger costs to the passenger and freight revenues. The ICC's system of allocating expenses to a particular class is antiquated and inefficient but continues to exist. The CAB and a number of airlines have had a fair number of difficulties in determining a proper cost allocation formula and have done considerable work in this field with the expectation of developing the proper solution to this problem long before the outbreak.

All of the airline industry's errors have not been committed by management. Financial contributors have made a few serious ones which have not helped the credit standing of the industry.

**TWA's Loss Check:** The outstanding example, of course, is the \$40 million in losses

extended by the Equitable Life Assurance Society of the United States to TWA. The deduction with an \$14.5 million in assets is not accurate nor are its actions beyond review. This insurance company with its long experience in making commitments and its staff of experts showed a remarkable lack of understanding of the simple facts of life concerning airline operations and trends. In loaning TWA for \$10 million and later in extending \$10 million, the Equitable did not insist upon additional equity capital being brought into the airline. The loans were accorded to finance the purchase of the Constellation and were assumed to be self-supporting through depreciation charges on an equipment.

Post experience has amply demonstrated that the recognition of new routes is a potentially expensive and requires considerable time before achieving profitable results. It must have been apparent that in a highly leveraged situation such as TWA's, a few adverse developments would wreck havoc with the company's finances. Unfortunately, though loans beyond its control—the granting of the Constellation and the plane's status with TWA in the rough financial weather. At that point, the company found it impossible to obtain additional funds except from its principal stockholder.

However, it would have been a far simpler matter if the Equitable had not declined its loan upon new equity deals being brought into the company at the time. At that stage, the credit rating of TWA was much better and it would not have been difficult to have arranged new lines of equity financing. The Equitable, however, appeared eager to advance the money to TWA and traditional precautionary matters appeared to be ignored.

**American Airlines Financing:** On the other hand, American Airlines in its financing issues that a year ago used a combination of bond and equity financing. A total of \$40 million in debentures and a like amount in convertible preferred was sold through various brokers. This insured the satisfaction of equity capital in a rush out to the bonds. It is interesting to note that the Equitable also bought \$10 million of the American debentures, which are currently sold at a market discount to the original offering price. It is also noteworthy

that the investment bankers at this time—Wells, Fargo & Co., Lehman Bros. Corp., Paine & Co. and Bancroft, Drexel & Co., experience considerable difficulty in selling their new issues and refunding loans while American received the total proceeds of approximately \$50 million.

**Capital's Difficulties—Capital Airlines:** In almost past financing has played that role and compounded its difficulties. In October, 1945, its investment bankers, White, Weld & Co., melted the airline with a \$10 million convertible income debenture issue.

These debentures have all the attributes of a convertible preferred stock and were never actually repaid as a bond by the investment public. Nevertheless, in doing nothing these investors in debentures and income securities have written into the trust in debenture which has the management up as high as it is in future financing, a conversion.

The debentures have on this as my property but are mostly backed by the company's general credit. Interest is mandatory on the debentures only if earned. The debenture holder certainly has no effect on equity, and for all practical purposes would have been in the same position holding convertible preferred stock. Had such a convertible equity been sold in Oct. 1945, Capital would have retained the ability to use some assets to finance its recent capital requirements. The fact remains that the market a few years ago would have shown a convertible preferred stock.

**Market Mistrust:** Moreover, the bankers again misjudged the market when they failed to force conversion of the debentures at an opportune time.

It is the existence of these debentures which effectively has prohibited the marketing of any new securities. In view of the marketplace in which Capital deals itself, White, Weld & Co. are rightly criticized to almost a recapitulation of the airline. This debenture structure failed and was self-defeating. The debenture holder could not accept it. Among other things, the debenture owner was asked to subscribe more of the same rights and equity subordinate their claim to the \$1 million in bond issue. For its services in effecting this recapitalization, the banking firm was to receive a fee for each "bond" deposited.

It is difficult to see how a group of debenture holders were quite ready to accept and could not understand why White, Weld & Co. should be so worked with a fee for underwriting the position of the debentures. It had said and which depended more than 90% of a price.

There are other examples where bad advice judgment on the part of bankers has not shown how in the best interests of the air transport industry. The financial community is a necessary and valuable element in the constructive development of the airlines. However, no one category of airline management or bankers have a monopoly of the constructive "know-how" necessary to ensure the success of any given company—Edgar A. Hahnel.



## PLANE TALK

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# Martin Memo

Published by The Glenn L. Martin Company  
Baltimore 3, Maryland



**Toughest Test Yet . . .** After having flown a distance greater than those tests, around the world during early flights and on CAA tests, the new Martin 2-0-2 is subjected to a grueling accelerated service test. First of its kind, the test consists of a series of flights carried out under actual airline operating conditions. It covers a nationwide network of more than 18,000 miles and included landings at more than 30 different airports. By meeting the varying extremes of altitude, weather and airport facilities encountered, the 2-0-2 offered further proof that it is America's top twin-engine airliner.

**Pilot's Third Arm . . .** The revolutionary new automatic, gongolier feathering system developed for use on the Martin 2-0-2 and 2-0-3, permits, for the first time, full take-off weights and maximum operating economy on a twin-engine airliner. Theoretically, instead, this latest Martin development assures top performance during complete or partial engine failure on take-off. The system, in effect, feathers the propeller when the windmilling drag exceeds the thrust and at the same time cuts off the fuel booster pump. Pilots can easily reverse the automatic system if they desire. Operators will benefit directly, as the use of the automatic feathering system allows greater take-off payloads.

**Keep Our Air Arm Strong . . .** The American Legion's intensive Air Power educational program is bringing to the American people the knowledge that Air Power is Power and that without air power there can be no security for the nation. In a statement to members of the American Legion, Paul H. Griffith, National Commander, stated in part: "The destiny of the United States and the world today

rests on air power. America must be kept first in the air. To keep America first we must continue our advanced aviation research and maintain an aircraft industry capable of rapid expansion in an emergency."



**Look What's Up . . .** The new Martin 2-0-2B, latest pride of the Army Air Force, gets a powerful push from its jet engines. Top speed at extremely high speeds in the largest conventional twin on plane yet constructed . . . permits a new bicycle-type landing gear developed by Martin for the AAF. Also in first flight on June 21, the 2-0-2B made its next three flights during the following week. An exceptional record for most newly designed planes, but not for a Martin plane. For example, the Martin 2-0-1, which made its second flight 25 hours after its first, had a record of nearly 300% availability during the rigorous testing period.

**Zip, and They're Up . . .** Thousand, one, thousand two, thousand three, thousand four . . . at take

four seconds to reach their climb and that's all the time it takes for the landing gear of the Martin 2-0-2 to retract. Exact figure is 3.9 seconds. That quick reduction of drag at take-off is an added safety factor, and enables the 2-0-2 to reach its high cruising speed faster.

**Feater, Express-Speed Schedules** on short-haul cost are comparable with the Martin 2-0-2. This speedy airliner cruises 100 m.p.h. faster than the planes it supplants. This extra speed enables operators to meet scheduled time by 35—built passenger acceptance—air more trips between cities. In short, the new 2-0-2 can cut costs, build profits for airlines.



**Zip 'em In . . .** No no-down is necessary to inspect or replace the Martin 2-0-2's wing fuel cells. Easily accessed or removed through specially designed hatches (oh, yes, these flexible cells provide safe, dependable storage for the 1100 gallons of gasoline carried by the 2-0-2). And being flexible, the two tanks (with capacity of 1100 gallons each) can be lowered or raised, depending on the weight of the aircraft. They are less likely to rupture when subjected to continuous vibration or excessive stresses and strains. Intricate carrier assemblies, engine, mounting and insulating mechanism are eliminated.

**New Wings for the World's Airways . . .** Modern Martin 2-0-2 luxury liners offer new standards in speed, comfort and dependability. Carry 36 to 40 passengers at speeds 300 m.p.h. faster than the planes they supplant. Air travelers and shippers will gain more time than ever before when they fly and ship in Martin transports on landings and flights. First deliveries on the new Martin 2-0-2 are to Northwest Airlines, which delivers to follow to other North and South American airlines.

**Martin AIRCRAFT**

Division of Glenn L. Martin Company, Inc.

## AIR TRANSPORT

### Traffic Below Expectations During First Half of 1947

Domestic airlines' revenue passenger mileage 10 percent above same 1946 period. But June slump breaks long string of monthly gains.

By CHARLES ADAMS

The domestic airlines' passenger traffic last year had leveled off after rising steadily for nearly two years, then dropping the late possibilities that 1947 business will show the 22 to 27 percent gains over 1946 predicted by analysts, operators might expect.

For 45 consecutive months until June of this year, the combined domestic airlines had reported their passenger-carrying record over the corresponding month of the previous year. The unprecedented string of monthly gains began with June, 1947's record over June, 1946. It ended when traffic dropped after three highly publicized DC 4 weeklies occurred in a 16-day period between May 29 and June 13 of this year.

During July 10 through August 10 passenger miles flown by the 16 domestic airlines increased from 2,183,537,000 in the first half of 1946 to 2,397,754,000 during the first six months of this year—a gain of 10 percent. But as June alone shows there was a decline of 5 percent from last year.

Where gains in January and February had

held around 15 percent over the same period last year, the airlines attributed the rise to a drop in traffic to the end of the winter and winter than normal weather. March gains reached 21 percent over the same 1946 month, but April's increase was only 13 percent and May's 9 percent, with the June loss following.

Four airlines showed—Delta, Eastern, TWA, and Northwest—more revenue passenger miles flown in June 1947 than in June 1946. Only four of the 16 domestic airlines showed increases in June, 1947, over June, 1946—American, Island, Mid-Continent and United.

Local factors were not at all simple. Among the big four, American's load factor was 74 percent in June, 1947, against 66 percent in June, 1946. Eastern was down to 80 percent in 1947, TWA down 66 percent in 1947 against 78 percent and United from 85 percent to 82 percent.

Similar Causes Aligned—The June decline was even more noticeable among some of the smaller carriers. National's load

factor dropped from 80 percent in June, 1946, to 41 percent in June, 1947, as its average passenger mileage fell from 17,254,400 to 11,412,600. Northwest's load factor plummeted from 69 percent to 44 percent and its average passenger mileage from 5,183,000 to 5,123,000 in the same months.

Having another series of air strikes, passenger traffic is still expected to end next all-time peak in 1947. But the increase over 1946, the previous record year, will be modest—certainly no more than 20 percent and probably considerably less.

■ Average Top 100 Miles—The 16 domestic airlines flew about 1,911,000,000 revenue passenger miles in 1946 and carried about 11,911,000 revenue passengers. Approximately 5,713,000 revenue passengers were flown in the first half of 1947.

Most low miles flown by domestic operators during the first half of 1947 totaled about 18,807,000 two miles, down 6 percent from the 20,100,000 two miles flown in the same 1946 period. But flight 100 miles flown more than tripled, rising from around 4,828,000 in the first half of 1946 to 12,922,000 in the first six months of 1947. Express rate miles rose 46 percent from about 9,600,000 miles in 1946 to 14,161,000 this year.

The seven fastest airlines in the first half of 1947 operated 11,758,000 revenue passenger miles, considerably less than 13 percent of the total flown by the 16 airlines. Eastern carried 31,619 passengers or slightly more than 1 percent of the number flown by the top half operators.



SAN FRANCISCO STREAMLINE AIRPORT FUELING

Faster and safer servicing of transport planes at San Francisco Municipal Airport has been made possible by this tailor-made fueling system developed by United Air Lines. Standard Oil Co. of California and Wayne Pump Co. DC-6 with fuel capacity of 4,200 gal. can be pumped at 141 g.p.m. Airline's stretch of system, which is now in operation, shows how use of fueling pipe diameter would for conventional tank trucks. For safety, air is measured by air-graduated pipelines to 14,000 gal. above ground tank which is automatically maintained at 5,000 gal. level by Standard's 1,000,000 gal. airport tank farm.



## White Takes NEA Engineering Post

Appointment of Robert E. White as director of engineering and maintenance for Northeast Airlines and designation of Robert H. Bates as vice president in charge of technical affairs for TWA were announced recently.

White has had 25 years' management experience in the aviation and petroleum industries. During the war he was chief of aircraft maintenance and engineering at the Air Transport Command's Inland-Central Division.

Bates, who has been vice president in charge of technical affairs for Northwest Airlines since March, 1945, will succeed Matthew M. Conroy, who stepped from TWA effective last 1.

**Other general developments**  
**Northwest**—James W. Hartley, treasury manager of some twelve line TWA's local, national, and international routes, has been named to the management position of director-general manager and president.  
**Pacific**—James H. O'Connor has been named to the position of vice president, TWA Pacific Division, in Portland, Ore. Ted Harris is San Francisco. Elmer Hines is Los Angeles and J. F. Thompson is Seattle.

## CAB ACTION

The Civil Aeronautics Board:

**Reopened** transportation of liquid petroleum air fuel gas cylinders and pressure vessels in aircraft cargo holds. (See Aviation Week, August 25, 1947, p. 10.)  
**Ordered** the use of fire extinguishers on aircraft. (See Aviation Week, August 25, 1947, p. 10.)  
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## EAL PLANS MILLION DOLLAR HANGAR

Continued work will be let on the \$1,800,000, five-story hangar which Eastern Air Lines plans to have completed at its Miami base by next summer. Aerial conception shows the proposed new building, which will be 570 ft. long and contain 100,000 sq. ft. of floor space—about twice the size of the largest structure now on Eastern's Florida base. It will accommodate eight planes at one time, two on each side. Eight dock and conference rooms which planes will be used are designed to handle Constellation, DC-4s and DC-3s. At each dock, a 20 ft. overhanging roof plus a 30 ft. span will enable the forward 35 ft. of the plane to be under cover while undergoing maintenance.

## Hawaiian Case

Applications for a new air route between the Pacific Northwest and Hawaii will be denied if CAB fails to recommend one, made this month by an executive in the case. Motion Pictures Co., Northwest Airlines Pan American Airways and Transocean Airlines have requested permission for the route.

In an alternative, company Western Airlines has asked that the board include a new provision to determine whether United Air Lines' route structure should be modified to permit the carrier to operate routing from the Pacific Northwest to Hawaii, by passing its route portion point at San Francisco, UAL, currently operates from Portland and Seattle to San Francisco and from San Francisco to Honolulu.

## Resort Airlines Given Special CAB Exemption

Resort Airlines, Portland, N. O., the nation's pioneer operator of "disposable" airlines, has been granted a special exemption by CAB permitting it to conduct the remainder of its domestic non-stop program as planned. (See Aviation Week, Aug. 4.)

The board's action indicates it has an open mind concerning this relatively new development in air transportation and regulation programs that one or more scheduled carriers may eventually be required for the specified operation. Record told CAB that it might have to suspend service pending the exemption was granted since the board's enforcement and inspection activities had found that the domestic route was being conducted with greater frequency than is permitted.

## Pan American to Fly Nonstop to London

Pan American Airways expects to improve the first regularly-scheduled non-stop New York-London service on Aug. 29 with four new type Constellation and plans to offer through sleeper service over the route beginning Sept. 15.

Equipped with increased fuel capacity, PAA's late model Constellations will make the nonstop Atlantic crossing in about 14 hours, stops at Gander, Newfoundland, and Shannon, Eire, being omitted. The planes have been operating an FAA's regular trans-Atlantic run for two months preliminary to introduction of the express-dispatch service. Pan American's Atlantic division will continue to use its 36 standard-type Constellations on Gander and Shannon.

Stronger Constellations will be available at a charge of \$115 above the regular \$325 New York-London fare, subject to CAB approval. Air France previously had an assumed plan to place long-range, deep-type Constellations on New York-Panama.

## Higher Revenues Lift American's Earnings

A sharp increase in operating revenue enabled American Airlines to show a \$746, 345 net profit in second quarter 1947 and to give its first quarter loss of \$1,973,458. Despite the latter second-quarter results, AA's net deficit for the first half of 1947 was \$2,287,293, compared with a net loss of \$123,746 in the same period last year. Second-quarter profit in 1946 was only \$315, 981, but first-quarter losses were far smaller than that year.

Operating revenue rose to \$21,115,105 in second quarter 1947, up 40 percent over first quarter revenues of \$15,126,748. Operating expense increased only slightly from \$19,215,575 in the first quarter to \$18, 293,762 in the second quarter.



## Engineers for Pioneers

SINCE aviation was an infant, Sensenich engineers have been adding their specialized skills to the development of new aircraft. So it's not surprising to find Sensenich blades on the V-173, a flying model of the Navy's XP5U-1—Glenn's Vought's flying wing which will have a speed range of 58 to 600 MPH.

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Helicopter and in the wind tunnel at United Aircraft Corp. as well as right on the nose of most of America's personal planes.

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## Viewing the News

**THE ACC REPORT**—The latest report of the Air Coordinating Committee offers few surprises to those in aviation. The few new points are mainly an accumulation of loose ends. The reference to advantages of air-line engines is a reflection of Mr. Lunde's philosophy.

Nevertheless, the report is an excellent source of material in 17 pages of the Executive branch's policies on all phases of commercial and military aviation. President Truman has already turned it over to his new Air Policy Commission as a pointer for their studies.

**FASTER ACCIDENT REPORTING**—Observers note in the ACC report a plea for prompt issuance of accident investigation reports. CAB Chairman Lunde has already stepped up the tempo of investigations but mostly in his capacity as Director of the President's Air Safety Commission. The Civil Aeronautics Board's small safety investigation staff already has been pushed almost beyond human endurance by its responsibilities to the President's Committee. The Truman group has released its own report on the Eastern Air Lines Post Deposit accident although the official CAB report has not yet been issued by CAB. It has also made recommendations based on studies of United's LaCrosse crash, and PCA's Leasing accident. CAB has had the UAL report up for accident agencies for five weeks. In general, CAB has been slowing reports from us, in eight months after crashes. Meanwhile both CAB and CAA continue to send their own staffs to scenes of all major crashes, and each duplicates many investigations of the other. The urgent need of the Civil Aeronautics Act, promulgating both agencies to investigate accidents, poses the way for endless confusion and delay.

**ALISON IS GRAMMING**—John Alison is keeping busy and consuming these days like a life-saving oxygen preparing for death. The new Assistant Secretary of Commerce related to control branch on his current attitude toward most aviation problems, the other day, in an interview with AVIATION WEEK. That explains who the man, about how in today's state is really kept grounded. Probably so other Government official is being watched as closely by aviation. Alison refuses it that he refuses to take policy until he is ready. Then, he says, he will make decisions and that, he thinks. It is a break away of friction between CAA and many Government agencies and industry groups, and is a strong believer in improving personal relations to accomplish any task.

**CAEL SULLIVAN DEPLORES AIRPORT CUT**—The Democratic National Committee's News Letter last week takes a wallop at the GOP for its lack of faith in aviation. The writer is Carl Sullivan, now the Committee's Executive Director. Sullivan, whose departure as

Second Assistant Postmaster General sent the P. O. Department back into its ancient lethargy at one time, says:

"Republicans hold that it's all right for airplanes to fly—although they prefer a horse and buggy—but they think it's just Democratic propaganda that they need well-planned, skillfully operated airports to land."

Sharp cuts by the Republican Congress for funds for airports all over the nation have reduced Federal aid for many cities by as much as 93 percent, even eliminated it entirely in some instances. Few cities have funds to replace the Federal help they will lose as a result of shortsighted Republican economy. So the result is a sharp reduction in our rate of aeronautical progress. Yet we all know this program is vital to national defense.

**TRUMAN BOARD BOGGING DOWN**—The President's special Air Safety Board seems bogged down in the drabbing Washington bust. After a strong and vigorous start sparked by CAB Chairman Lunde and the airline pilots representative Earl Cox, the Board has been sharing all into dead-end streets and losing its momentum down the broad road of immediate improvement of airline safety. Few official members are attending meetings regularly. Substitutes are often in a hurry. Consequently, few decisions are made. The board's biggest achievement to date is requiring absolute terms clearance indicators, removal of the transport category, to include the transport factor in computing maximum takeoff weight and strengthening through tests on the structure of converted C-54's that have given the airplane a clean bill of health since the 71 reported daily gross weight as was reduced to three DC-4 accidents by putting blame on the aircraft or its crew members. The board has yet to tackle such vital issues as addition of a flight engineer to the crew of four engine transports; fire protection; and stricter changes in pilots and airfield operations of over regulations in CAA/CAA.

**DR. LEWIS BECOMES CONSULTANT**—As this issue closed, some word of the appointment of Dr. Hugh Evelyn Anderson, Director of the National Bureau of Standards as Director of Aeronautical Research for NACA. He replaces Dr. George W. Lewis who has held that post for more than a quarter of a century. Dr. Lewis will retain his NACA connection as Research Consultant. He has earned a distinguished record at NACA. He has won worldwide recognition in the highest aeronautical engineering circles through the most important and brave years in aviation history. Few could know of the diligence of his labors, in the detriment of his own health. We shall soon hear, but are thankful that NACA will benefit from his experience.

ROBERT H. WOOD

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of oil cooler failure. A significant factor in the design of this oil cooler was Clifford's unique wind tunnel laboratory—the largest, most modern in the industry—which supplied the basic data resulting in an oil cooler meeting the 47B's special requirements. Inquiries concerning aluminum oil coolers are invited. Clifford Manufacturing Company, 561 E. First St., Boston 27, Mass. Offices in Detroit, Chicago, Los Angeles.

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